

REMARKS

Claims 1-49 remain pending herein. Claims 11-49 have been withdrawn from consideration.

Claims 1-10 were rejected under §102(b)/§103 over Shaffer et al. '009. This rejection is respectfully traversed for the following reasons.

The claimed invention has been developed to address deficiencies with state of the art boron nitride powders that have various commercial uses, notably for use as a thermal filler in high performance thermal interface materials used in the electronics industry. It is generally desired that such fillers have high thermal conductivity, low electrical conductivity, and enhanced thermal conductivity under low loading levels. The claimed invention provides an agglomerated powder that combines features of low density and high strength. Stated alternatively, the claimed boron nitride agglomerated powder has a high fracture strength to tap density ratio, particularly, not less than 11 MPa·cc/g.

The notably high strength per unit density according to the claimed boron nitride agglomerated powder is achieved through a particular process flow as described throughout the entirety of the present specification and illustrated in FIG. 1. Among the various features that contribute to the achievement of a powder formed of agglomerates having high strength and low density, a classified, *agglomerated* feedstock powder is subjected to heat treatment, such as at a temperature above 1400°C. Desirably, the feedstock powder is not only agglomerated, but also has a fine crystallite size, such as not greater than about 5 microns. Still further, the feedstock powder is preferentially formed through a pressing/crushing operation as depicted in steps 10-14 shown in FIG. 1.

Turning to the cited prior art, the teachings of Shaffer et al. represent the very prior art over which the present invention was developed. See, for example, Applicants' recognition of the disclosure of Shaffer et al. in the background, paragraph 5. Turning more specifically to the disclosure of Shaffer et al., column 1, lines 15-30 describe a commonly known process flow in which turbostratic boron nitride powder is heat treated for purification, resulting in a highly agglomerated powder which is then milled for commercial implementation. The morphology of

commercially available turbostratic boron nitride powder does not enable the formation of high strength, low-density agglomerates. In fact, actual testing by applicants of such turbostratic boron nitride powder, post heat treatment, has revealed that agglomerate strength per unit density is substantially lower than the claimed 11 MPa-cc/g. In fact, agglomerate strength testing has shown values on the order of about one-half of embodiments of the claimed invention.

Accordingly, Applicants submit that it is quite clear that the teaching of Shaffer et al. does not naturally or inherently result in the claimed strength to tap density ratio. Accordingly, reconsideration and withdrawal of the §102/§103 rejection over Shaffer et al. are respectfully requested.

Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to contact Applicants' undersigned attorney at the number listed below.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-3797.

Respectfully submitted,

Date

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Jeffrey S. Abel, Reg. No. 36,079

Attorney for Applicant(s)

LARSON NEWMAN ABEL POLANSKY &
WHITE, LLP

5914 West Courtyard Drive, Suite 200

Austin, TX 78730

(512) 439-7100 (phone)

(512) 439-7199 (fax)